

2. The method of claim 10 wherein the co-evaporating and depositing are conducted in a chamber, and wherein there is no O<sub>2</sub> flowed into the chamber during the co-evaporation and deposition.

3. The method of claim 10 wherein the co-evaporating comprises thermal evaporation of the aluminum oxide from single crystal sapphire.

4. The method of claim 10 wherein the co-evaporating comprises thermal evaporation of the silicon monoxide.

5. The method of claim 10 wherein the co-evaporating comprises ion beam evaporation of the aluminum oxide.

6. The method of claim 10 wherein the co-evaporating comprises electron gun evaporation of the aluminum oxide.

7. The method of claim 10 wherein the co-evaporating comprises:  
thermal evaporation of the silicon monoxide; and  
one or both of electron gun evaporation and ion beam evaporation of the aluminum oxide.

8. The method of claim 10 wherein the substrate comprises silicon.

9. The method of claim 10 wherein the substrate comprises monocrystalline silicon.

10. A method of forming an assembly comprising silicon-doped aluminum oxide, comprising:

co-evaporating aluminum oxide and silicon monoxide;

depositing at least some of the evaporated aluminum oxide and silicon monoxide on a semiconductive material substrate to form the silicon-doped aluminum oxide on the substrate; and

forming a conductive material on the deposited silicon-doped aluminum oxide, the conductive material being separated from the semiconductive material of the substrate by the silicon-doped aluminum oxide.

30. (New) The method of claim 10 further comprising providing a source comprising silicon monoxide, wherein the evaporating silicon monoxide comprises evaporating silicon monoxide from the source.

31. (New) The method of claim 10 wherein the silicon-doped aluminum oxide contains from 0.1 percent to about 30 weight percent of silicon dopant, by weight.

32. (New) The method of claim 10 wherein the semiconductive material substrate is room temperature during the depositing.